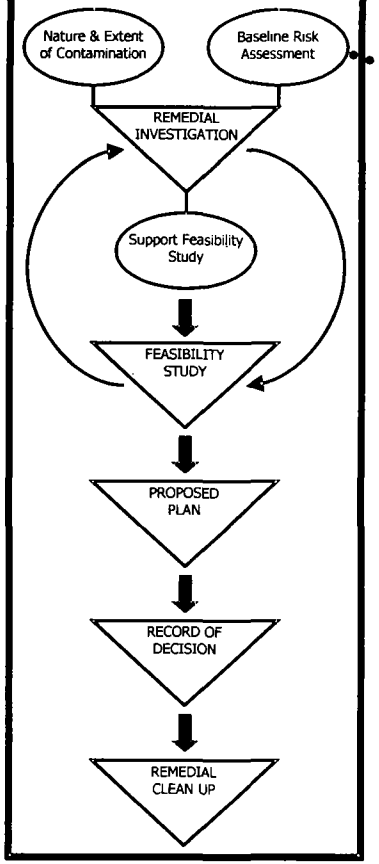
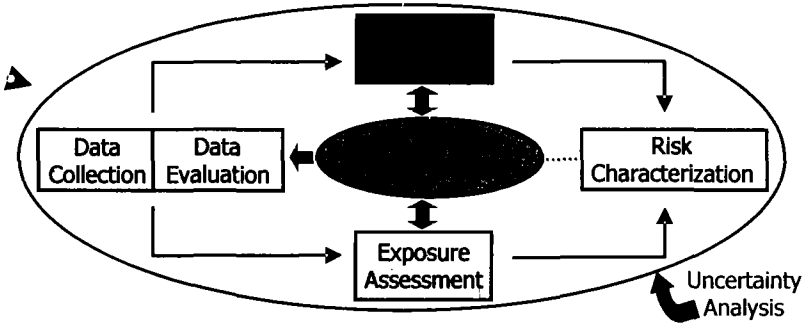
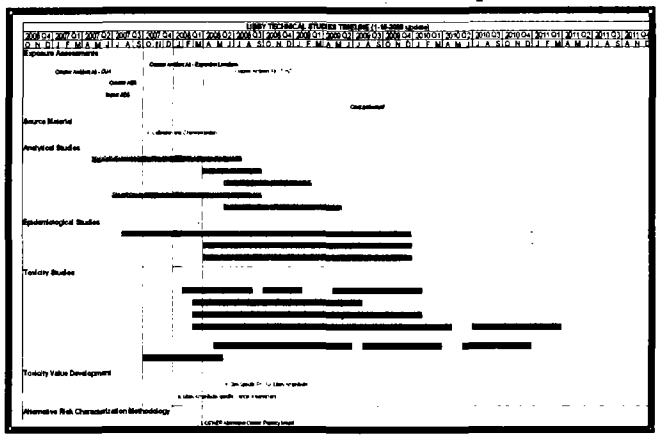
OVERVIEW OF RISK ASSESSMENT APPROACH FOR LIBBY OPERABLE U...

SUPERFUND REMEDIAL PROCESS
LONG-TERM PROTECTIVE ACTIONS



BASELINE HUMAN HEALTH RISK ASSESSMENT





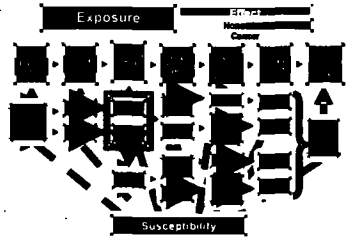
SOURCE MATERIAL COLLECTION & CHARACTERIZATION

TOXICOLOGICAL STUDIES

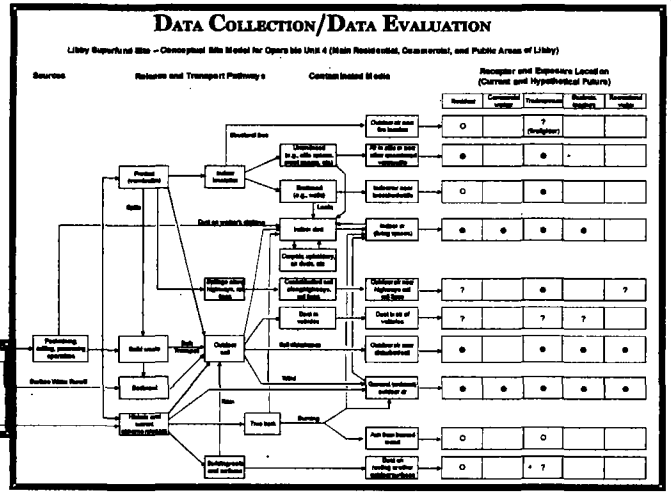
- Libby Amphibole RfC Development
- Libby Amphibole Cancer Assessment
- NHEERL Dosimetry Model
- NHEERL In Vitro Dissolution Assays
- NHEERL In Vitro Toxicity Endpoints
- NHEERL Comparative Toxicology in Mice and Rats
- NHEERL Inhalation Toxicology in Rats

RISK CHARACTERIZATION

1) Draft Conceptual Mode of Action Schematic for Libby Amphibole Asbestos

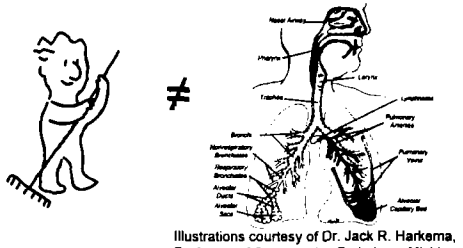


DATA COLLECTION/DATA EVALUATION



EXPOSURE ASSESSMENT

- Outdoor Ambient Air Monitoring Program
- Indoor and Outdoor Activity-based Sampling
- Other pathways



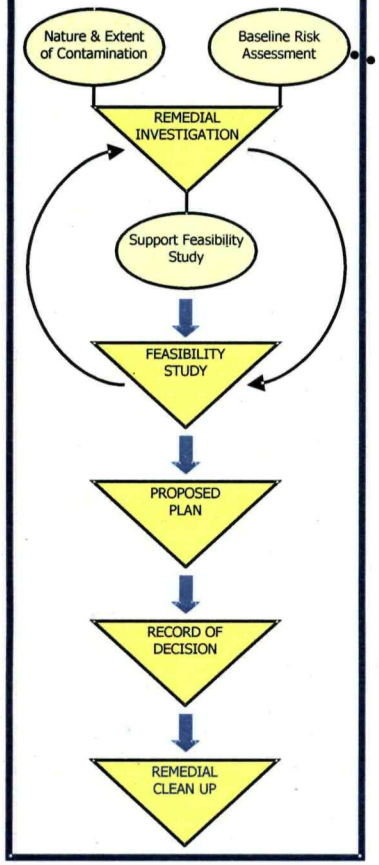
Illustrations courtesy of Dr. Jack R. Harkema, Professor of Comparative Pathology, Michigan State University.

- External exposure is not equivalent to internal dose.
- Dosimetry model is based on understanding of biological mechanisms to describe internal dose.
- Model can be applied for more accurate analysis of adverse response(s) to inhalation of Libby Amphibole asbestos.
- Use of model reduces uncertainty and improves risk assessment.

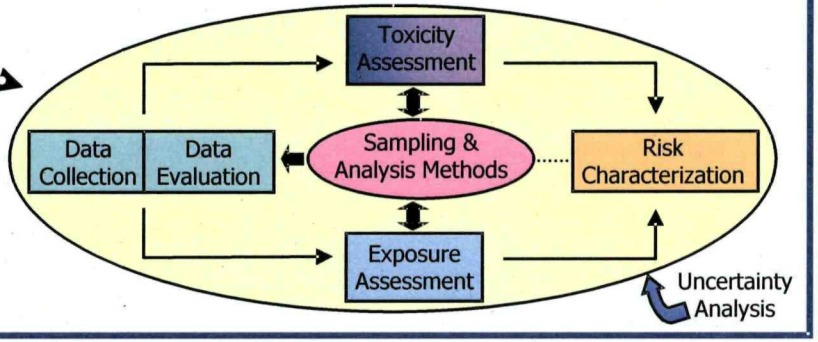
2) OSWER Alternative Approach for Estimating Potency Factors for Lung Cancer and Mesothelioma following Inhalation of Asbestos

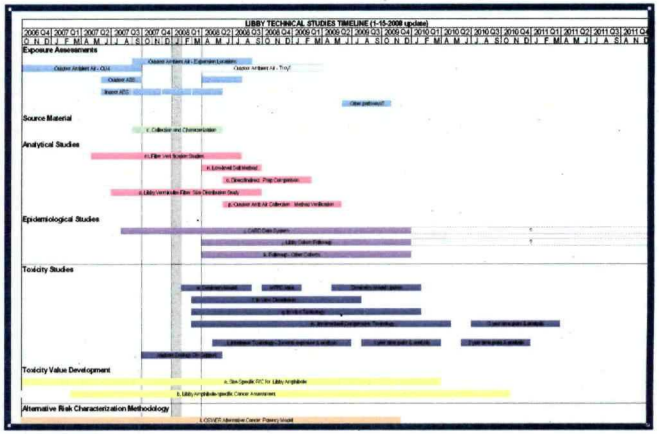
OVERVIEW OF RISK ASSESSMENT APPROACH FOR LIBBY OPERABLE UNIT 4

SUPERFUND REMEDIAL PROCESS
LONG-TERM PROTECTIVE ACTIONS



BASELINE HUMAN HEALTH RISK ASSESSMENT





TOXICITY ASSESSMENT SUPPORT STUDIES

SOURCE MATERIAL COLLECTION & CHARACTERIZATION

TOXICOLOGICAL STUDIES
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- Libby Amphibole Cancer Assessment
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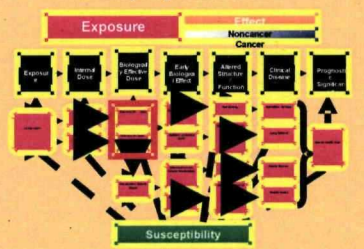
- NHEERL Inhalation Toxicology in Rats

EPIDEMIOLOGICAL STUDIES
- New Epidemiologic Information from Libby Montana Cohort
- New Epidemiologic Information from Other Cohorts

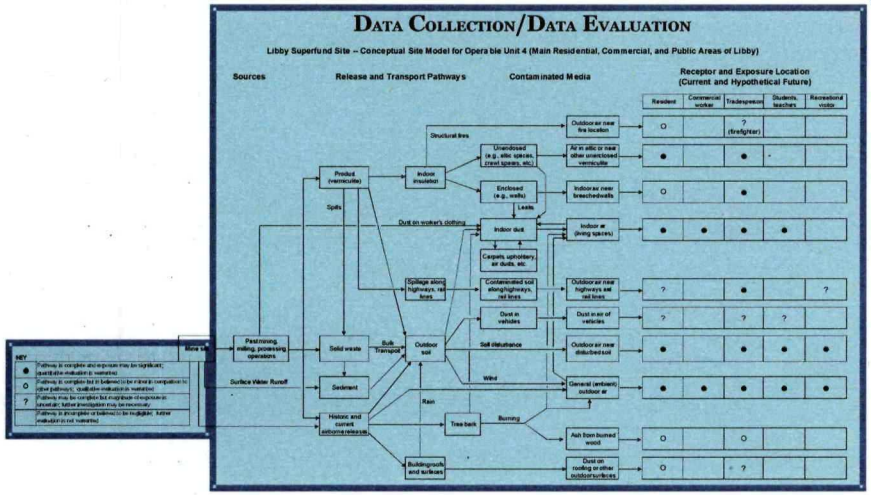
RISK CHARACTERIZATION

1) Draft Conceptual Mode of Action Schematic for Libby Amphibole Asbestos



SAMPLING & ANALYSIS STUDIES
- Filter Verification Study
- Low-Level Soil Method Development
- Comparison of Direct & Indirect Preparations
- Libby Vermiculite Fiber Size Distribution Evaluation
- Ambient Air Collection Method Verification

DATA COLLECTION/DATA EVALUATION



EXPOSURE ASSESSMENT
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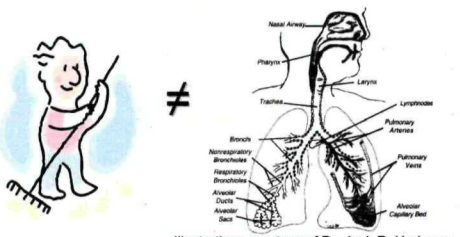
- Other pathways



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